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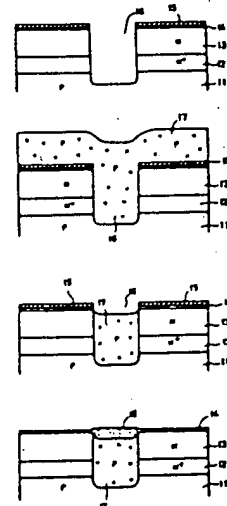
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(54) MANUFACTURE OF SEMICONDUCTOR DEVICE

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(71) FUJITSU K.K. (72) TOSHIO KURAHASHI
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PURPOSE: To omit processes, and to remove stress due to the interposition of a silicon dioxide film by forming a groove reaching to a substrate, depositing one conduction type polycrystalline semiconductor layer in the groove and oxidizing the surface to form an insulating film.

CONSTITUTION: A U-shaped groove 16 is formed through dry etching while using the double films of a silicon dioxide film 14 and a silicon nitride film 15 as a mask. The vertical etching groove penetrates an N type semiconductor layer 13 and an N⁺ type semiconductor layer 12, and reaches to the P type semiconductor substrate 11. The P type polycrystalline silicon layer 17 containing B is laminated, the polycrystalline silicon layer 17 on the silicon nitride film 15 is removed, and an upper section in the U-shaped groove 16 is also removed slightly through etching to form a recessed section. The silicon dioxide film 18 is formed on the polycrystalline silicon layer 17 through thermal oxidation, the silicon nitride film 15 is removed through etching, and an element isolation region is completed.



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